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AGO ltr 29 Apr 1980

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DEPARTMENT OF THE ARMY  
OFFICE OF THE ADJUTANT GENERAL  
WASHINGTON, D.C. 20310

IN REPLY REFER TO

AGDA (M) (9 Dec 69) FOR OT UT 693003

12 December 1969

SUBJECT: Operational Report - Lessons Learned, Headquarters, 86th Signal Battalion, Period Ending 31 July 1969

SEE DISTRIBUTION

1. Subject report is forwarded for review and evaluation in accordance with paragraph 4b, AR 525-15. Evaluations and corrective actions should be reported to ACSFOR OT UT, Operational Reports Branch, within 90 days of receipt of covering letter.

2. Information contained in this report is provided to insure appropriate benefits in the future from lessons learned during current operations and may be adapted for use in developing training material.

BY ORDER OF THE SECRETARY OF THE ARMY:

*Kenneth G. Wickham*

KENNETH G. WICKHAM  
Major General, USA  
The Adjutant General

1 Incl  
as

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AD 863235

15



DEPARTMENT OF THE ARMY  
HEADQUARTERS, 86TH SIGNAL BATTALION (SPT)  
APO 96353

SCCPV-SG-SV-CO

5 August 1969

SUBJECT: Operation Report of Headquarters, 86th Signal Battalion for  
Period Ending 31 July 1969, RCS CSFOR-65 (R1)

TO: SEE DISTRIBUTION

1. Section 1, Operation: Significant Activities.

a. Communications Center. Restructure of Battalion Commcenter Circuit Paths. During the past quarter the Battalion Commander directed that a detailed traffic study be conducted at the Duc Hoa and Cu Chi commcenters in an effort to reduce the traffic volume and number of circuits at the Duc Hoa site.

(1) Reduction was necessary because during the next quarter Duc Hoa Commcenter will move from a fixed station configuration to a "revanized" configuration in a signal complex bunker. This move will necessitate operation out of a MSC-29 shelter. In addition, it was felt that the number of circuits terminated at Duc Hoa was over and above what was required to support the MACV advisory effort. At the inception of the study, Duc Hoa was terminating six circuits (3-FDX and 3-HPX).

(2) The Battalion Commcenter NCO spent a week at Duc Hoa Commcenter gathering facts and weighing possibilities for reterminating circuits. The findings of this study were as follows. It was recommended by this headquarters that the Tan An - Duc Hoa circuit be reterminated out of Duc Hoa and directly into Bien Hoa. This recommendation was made because the majority of Tan An's traffic was addressed to the 525th Military Intelligence Group located in the Saigon area or the III ARVN Corps located at Bien Hoa. Duc Hoa was simply increasing handling time by having to relay this traffic. The second recommendation was to establish a half duplex circuit between Duc Hoa and Cu Chi. The establishment of this circuit would insure command control between the Battalion's two largest commcenters and it would allow an efficient and diverse alternate capability for both Cu Chi and Duc Hoa.

(3) All the above recommendations were approved by 2nd Signal Group and subsequently implemented by this Bn. The Duc Hoa commcenter is now at a realistic size and the move to "revanization" will be simple.

(4) With the addition of an additional MODE V at Cu Chi, the increased traffic volume as a result of obtaining two new circuits has had no adverse effects on handling times or traffic quality.

FOR OT UT  
693003

Inclosure

(5) The operation of the Cu Chi MODE V terminals has been mastered. The aggressive and realistic supervisory training program initiated last quarter has continued to pay high dividends in the areas of traffic quality and rejection rates. The rejection rates for the past three months were 3.9, 4.6, and 3.1 respectively. It is emphasized again that each and every supervisor in the commcenter must be a skilled technician in order for the sophisticated MODE V to work properly.

b. POWER. During the past quarter four new power distribution systems were introduced at four of the Battalion's sites. The importance for a reliable yet simple power distribution system was realized, studied, and put into being. The components of such a system basically consist of two double throw switch boxes, a single throw switch box, and a power distribution panel. The following diagram (Inclosure 1) depicts the hook up used at four of the Battalion's sites. There are several distinct advantages of this distribution system. The most important advantage is that the system is simple. Even the most inexperienced operator can be taught this system in a matter of minutes. This area of operator understanding cannot be emphasized enough. As a result of the simplicity of this distribution system, the four sites employing it in its entirety have experienced no significant power outages. Another advantage is that the separate bus system for air conditioning, lights, etc allows these appliances to be maintained and operated separately without interruption to the main signal service, although they are powered by the same source. Depending upon the capacity of the secondary power source the air conditioner bus can be wired so as to either operate or not operate when the secondary power source must be used. An example of this is the system at Cu Chi UHF. Because the secondary power generation equipment is capable of only 45KW and the total load, inclusive of air conditioners, of the UHF site is 52KW, the system is wired in the switchbox (switchbox B, see diagram Inclosure 1) so that when secondary power is required the air conditioner bus is completely cut off. This flexibility is invaluable in maintaining a smooth transition from primary to secondary power and vice versa.

c. DIAL TELEPHONE EXCHANGE. Within the past quarter the Cu Chi DTE has continued conditioning the office for tandem switch operation. Final testing was accomplished during the month of June and actual cutover of the programed 20 circuits began on 30 June. No serious problems were encountered during the testing phase or during the cutover operation. This smooth transition has resulted because of complete prior planning, maximum cooperation between Tan Son Nhut DTE and Cu Chi DTE, and interest generated within the enlisted as well as GHO ranks.

d. UHF SYSTEMS. During the past ninety days the UHF system configuration was increased by two more 12 channel systems. The W-72 system from Cu Chi to Lai Khe was activated as was the W-15 system from Cu Chi to Duc Hoa. No problems were encountered in the activation of the two systems.

e. MAJOR CONSTRUCTION PROJECTS. Several major construction projects were initiated and several completed during the past reporting quarter.

(1). Cu Chi. Construction on the UHF signal bunker complex was completed in early June and the entire "revanization" was completed on 15 June. This project was 100% self-help to include wiring, revetment construction and interior finishing.

(2). Cu Chi. With the relocation of the Cu Chi UHF complex to the vanized bunker, the Battalion EMF expanded their facility utilizing the old UHF site. This efficient and well organized shop is now centralized and the physical layout permits a continuous and impressive work flow.

(3). Dau Tieng. The signal bunker was completed during May and movement of the switchboard and UHF equipment into the bunker was made.

(4). Ben Luc. In accordance with a request made by this headquarters to construct a bunker complex at the Ben Luc Naval Site, the bunker was started and finished. This bunker houses one AN/TRC-117 and one MCG-9 used for the switchboard facility. In addition to going operational in the bunker complex, an outside cable plant was installed by the 267th Sig Company.

(5) Duc Hoa. Work was started on the 12 bay bunker complex which will be used to house the Commcenter, UHF facility, wirehead, and switchboard. Anticipated completion date for this project is 15 August 69.

## 2. Section 2, Lessons Learned: Commander's Observations, Evaluations, and Recommendations.

a. Personnel. None

b. Operations.

### (1) MODE V Voltage Regulation.

(a) OBSERVATION: The Battalion has two MODE V terminals at Cu Chi which are powered by a central power plant ran by PA&E. Although the power is stable, it has been found that CN514 voltage regulators are necessary for efficient MODE V operations.

(b) EVALUATION; Two CN514 voltage regulators were taken out of two PCM vans in order to equip the MODE V terminals. This rendered the PCM vans nonoperational.

(c) RECOMMENDATION: MODE V vans should be equipped with their own CN514 voltage regulators.

### (2) Conversion of SB/86 Switchboard to Common Battery.

(a) OBSERVATION: The Battalion was directed to convert all SB/86 switchboards to common battery operation.

(b) EVALUATION; Although the common battery mode of operation is more convenient to the customer, its efficiency and reliability are marginal when TA 312's are used by the customer.

The average subscriber is ignorant or apathetic to the proper using and maintenance procedures of a TA-312 telephone. Consequently, the retaining spring on the TA-312 is weakened by abuse and the retention necessary for common battery operation is not sufficient to extinguish the drop on the SB/86 when the phone is hung up.

(c) RECOMMENDATION: Unless a sufficient quantity of TA-236 telephones are on hand, SB/86 switchboards should not be converted to common battery use.

(3) Movement of MTC-1 at Dau Tieng.

(a) OBSERVATION: The Battalion was faced with a problem of moving the MTC-1 switchboard into the new bunker complex. No MTC-1s were available in the assets of 2nd Signal Group and the move had to be accomplished by either taking an outage or moving the board while operational.

(b) EVALUATION: Having studied the possibility of moving the MTC-1 while still in operation, it was decided that such a move was possible and no service would be lost. The move was made as a result of excellent prior planning and the confidence of site personnel that the move could be made.

(c) RECOMMENDATION: Careful planning can result in equipment moves on site with no loss in service. If the physical layout of the site permits and the nonavailability of equipment prevents one for one substitution, every effort should be made to move equipment while in operation if all safety precautions are met and no personnel or equipment damages will occur.

(4) Out-Side Cable Plants.

(a) OBSERVATION: The Bn has been plagued with an excess of cable damage due to the frequency of enemy rocket/mortar attacks. As a result of this damage, many subscribers have lost service for extended periods of time.

(b) EVALUATION: In this type of warfare where Base Camp areas are subject to frequent attacks by fire, some (and often extensive) cable damage can be expected to exposed aerial cable. Especially critical are those areas where two or more main feeder cables are laced together and follow the same route. One round can cause damage to all main feeder cables in such an arrangement.

(c) RECOMMENDATION: The installation of all outside plants in base camp areas where enemy attacks by fire are frequent should be underground. If underground installation is not feasible then every effort should be made to route the main feeder cables separately.

(5) Circuit Record Logs.

(a) OBSERVATION: The Bn had made no effort until the last quarter to reconcile its circuit records with those of 2nd Signal Group.



(b) EVALUATION: Because of the lack of reconciliation, it was found that there were numerous discrepancies between the Bn's records and those of higher headquarters. These discrepancies have caused errors in reporting and loss of efficient command and control at the Bn level.

(c) RECOMMENDATION: It is recommended that quarterly reconciliation be conducted between Group and Bn headquarters.

c. Training. None


d. Intelligence. None

e. Logistics. None

f. Organization. None

g. Other. None

2 Incl  
Power Distribution System Chart  
Organizational Chart

  
EUGENE J. VITETTA  
LTC, SigC  
Commanding

DISTRIBUTION:

- 2 - Assistant Chief of Staff for Force Development, Department of the Army, Washington, D. C. 20310
- 1 - Commanding General, USASTRATCOM, ATTN: DCSOPS, SCC-OPS-RT, Fort Huachuca, Arizona 85613
- 3 - Commanding General, USARV, ATTN: AVHGC-DST, APO 96375
- 2 - CINCUSARPAC, ATTN: GPOP-DT, APO 96558
- 1 - Commanding General, USASTRATCOM-PAC, Schofield Barracks, Hawaii, APO 96557
- 1 - Commanding General, 1st Signal Brigade (USASTRATCOM), ATTN: SCCPV-OP, APO SF 96384
- 5 - Commanding Officer, 2nd Signal Group, ATTN: SCCPV-SG-PP, APO 96491

SCCPV-SG-CO (5 August 1969) 1st Ind  
SUBJECT: Operational Report of Headquarters, 86th Signal Battalion for  
Period Ending 31 July 1969, RCS CSFOR-65 (R1)

DA, HQ, 2d Signal Group, APO SF 96491 27 AUG 1969

THRU: Commanding General, 1st Signal Brigade (USASTRATCOM), ATTN:  
SCCPV-OP, APO SF 96384  
Commanding General, USARV, ATTN: ACHGC-DST, APO SF 96375  
CINCUSARPAC, ATTN: CPOP-DT, APO SF 96558

TO: Assistant Chief of Staff for Force Development, Department of the  
Army (ACSFOR, DA), Washington, D.C. 20310

1. Subject report is forwarded in accordance with 1st Signal Brigade  
Regulation CCPVR 1-19, dated 12 July 1968 as changed.

2. The report has been reviewed and is concurred in by this Headquarters,  
except that portion reflecting the removal of CN 514 power supplies from  
contingency TRC (PCM) vans for use in the Mode V. This Headquarters does  
concur in the need for CN 514's to be included as a part of the Mode V  
package.



EDWARD D. MEARES  
Colonel, SigC  
Commanding

SCCPV-OP-SD (5 Aug 69) 2nd Ind

SUBJECT: Operational Report of Headquarters, 86th Signal Battalion for  
Period Ending 31 July 1969, RCS CSFOR-65 (R1)

DA, HQ, 1st Signal Brigade, (USASTRATCOM), APO 96384 21 October 1969

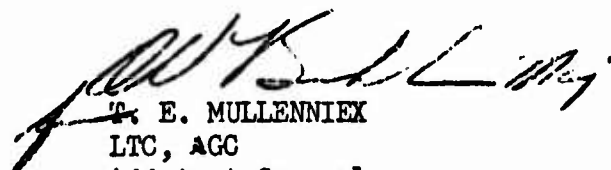
TO: Commanding General, United States Army Vietnam, ATTN: AVHGG-DST,  
APO 96375

1. Subject report is forwarded in accordance with USARV Regulation 525-15.
2. The report has been reviewed by this headquarters and is concurred in, as indorsed, with the following comments and/or exceptions.

a. Paragraph 2b(1), page 3. Concur in the basic proposal to incorporate CN-514 voltage regulators as a component of the Mode V transportable terminals. However, this should not be done at the expense of rendering other equipments non-operational. The unit is advised to initiate Equipment Improvement Recommendation.

b. Paragraph 2b(4), page 4. It is a Brigade policy to engineer all new cable for underground installation where feasible.

FOR THE COMMANDER:

  
T. E. MULLENNIEX  
LTC, AGC  
Adjutant General

CF: CG, United States Army Strategic Communications Command, ATTN: DCSOPS,  
SCC-OPS-RT, Fort Huachuca, Arizona 85613  
CO, 2nd Signal Group APO 96491  
CO, 86th Signal Battalion, APO 96353

AVHGC-DST (5 Aug 69) 3d Ind

SUBJECT: Operation Report of Headquarters, 86th Signal Battalion for  
Period Ending 31 July 1969, RCS CSFOR-65 (R1)


HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO San Francisco 96375 31 001 1969

THRU: Commanding General, United States Army Strategic Communications  
Command-Pacific, APO 96557

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT,  
APO 96558

This headquarters has reviewed the Operational Report-Lessons Learned  
for the quarterly period ending 31 July 1969 from Headquarters, 86th  
Signal Battalion (SPT) and concurs with the report as indorsed.

FOR THE COMMANDER:

  
RICHARD V. FULP  
CPT, USA  
Assistant Adjutant General

Cy furn:  
86th Sig Bn  
1st Sig Bde

SCCP-OP (5 Aug 69) 4th Ind

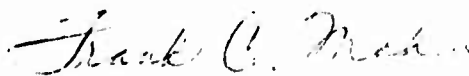
SUBJECT: Operation Report of Headquarters, 86th Signal Battalion  
for Period Ending 31 July 1969, RCS CSFOR-65 (R1)

Headquarters, U. S. Army Strategic Communications Command-Pacific,  
APO San Francisco 96557 20 NOV 1969

TO: Commander in Chief, United States Army, Pacific, ATTN:  
GPOP-DT, APO 96558

1. Subject report is forwarded in accordance with AR 525-15.
2. This headquarters has reviewed and concurs with subject report as indorsed.

FOR THE COMMANDER:



FRANK C. MAHIN  
COL, GS  
Chief of Staff

GPOP-DT (5 Aug 69) 5th Ind  
SUBJECT: Operational Report of HQ, 86th Signal Battalion  
(Spt) for Period Ending 31 July 1969, RCS CSFOR-65  
(R1)

HQ, US Army, Pacific, APO San Francisco 96558 22 NOV 69

THRU: Commanding General, US Army Strategic Communications  
Command, Fort Huachuca, Arizona 85613

TO: Assistant Chief of Staff for Force Development,  
Department of the Army, Washington, D. C. 20310

This headquarters concurs in subject report as indorsed.

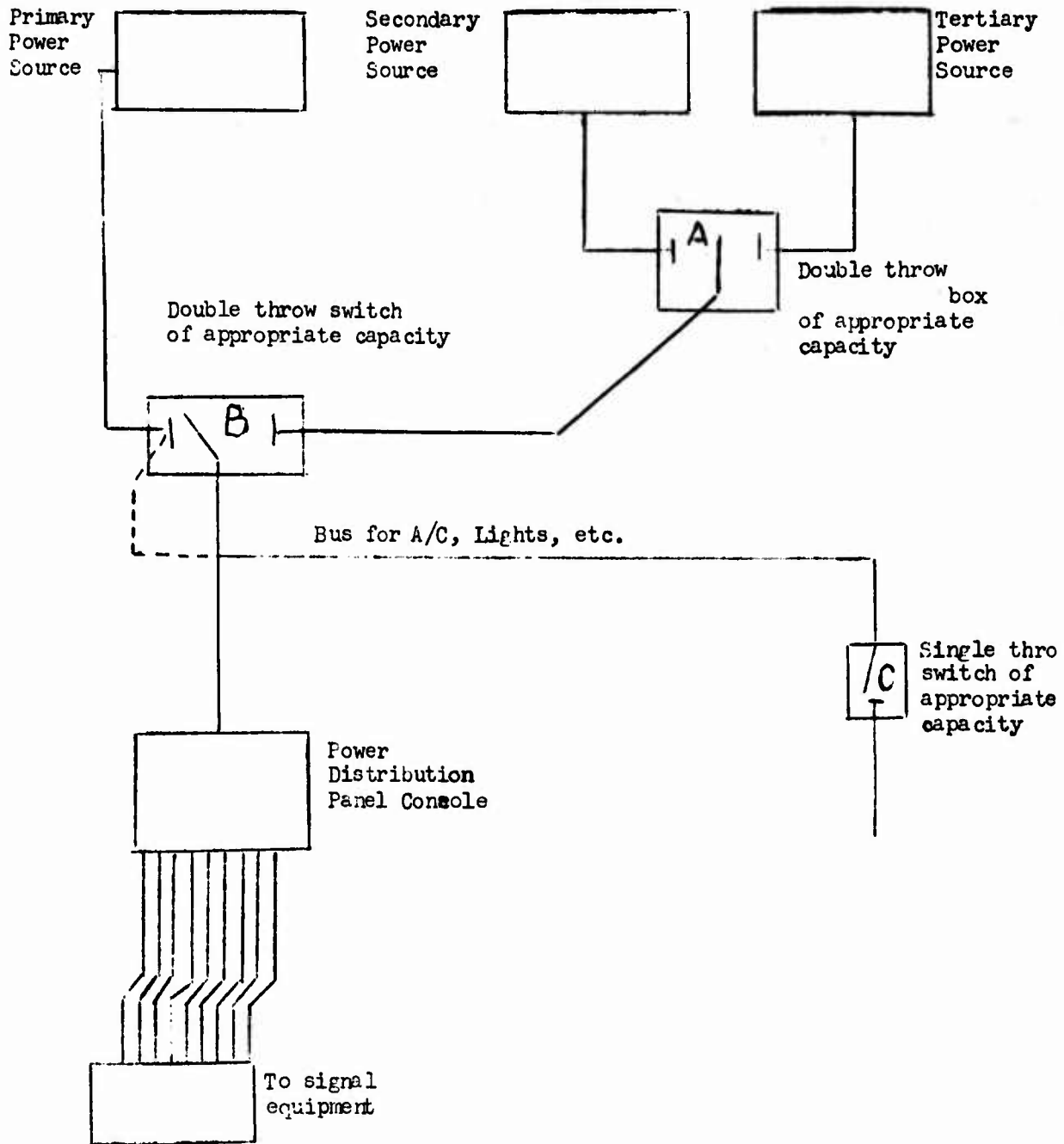
FOR THE COMMANDER IN CHIEF:



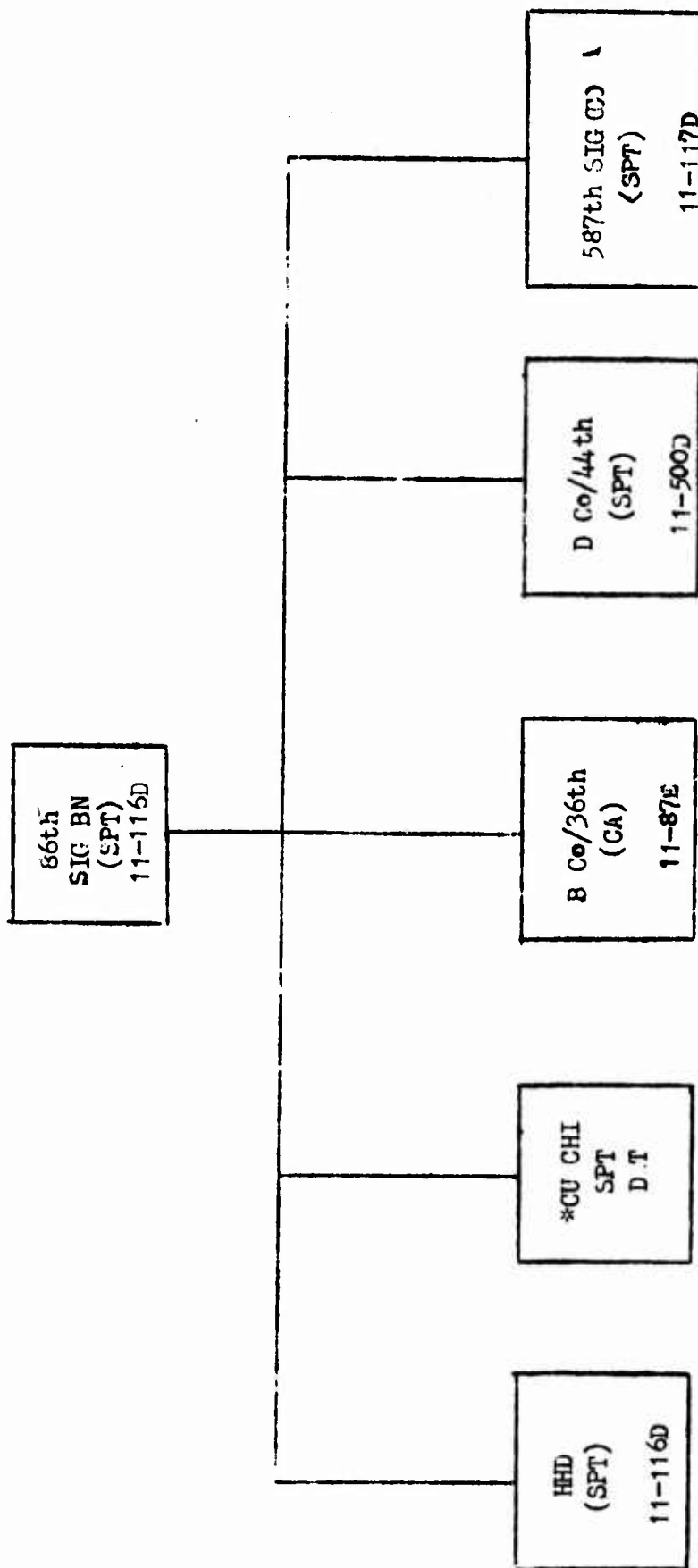
D. A. TUCKER  
CPT. AGC  
ASST AG

CF:  
DA, ACSFOR  
CG, USASTRATCOM-PAC

# POWER DISTRIBUTION SYSTEM



ORGANIZATIONAL CHART



\* This Detachment now being formed to operate and maintain

the new Cu Chi COMBAT CENTER, AUTODIN, AND DCO



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